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Business Prospects for Hydroponic Vegetables in the Midst of The COVID-19 Pandemic : A Case Study on "Indah Berbagi Foundation"

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A B S T R A C T

The COVID-19 outbreak has occurred and has had a substantial impact on many aspects of public life that are not only a health problem, but also affect the world economy and the environment in various ways. It seems that no country can avoid it and is not affected by its existence, and Indonesia is no exception. The main objective of this study is to determine the economic resilience of the community in dealing with COVID-19 pandemic espesially in hydroponic vegetable business. Data were collected through in-depth interviews with hydroponic activists, documentation and observation conducted during September 2020. The collected data were analyzed through data triangulation. The results show that hydroponic vegetable business developed by Indah Berbagi Foundation has implemented the floating hydroponic method or also known as the Floating Raft method and the Nutrient Film Technique (NFT) system. Hydroponic vegetable business was profitable and the technology used compatible with characteristics of areas that have limited land. In general, it can be concluded that the public perception of hydroponic vegetables is positive and agrees with the questions posed with an overall score of 4.3. Hydroponic business can help the community's economy. Using pay back period method, it's known that the hydroponic vegetable business can provide benefits and fast return on investment so that it is very useful in supporting the economic resilience of the community.

1. INTRODUCTION

The COVID-19 pandemic originated from a report of a pneumonia case in Wuhan City, Hubei Province, China at the end of 2019 whose cause was unknown. The number of pneumonia patients has risen sharply and has spread not only throughout China, but all over the world. The outbreak has infected more than 10 million people and resulted in more than 500,000 deaths in 216 countries or territories after six months. The COVID-19 pandemic in Indonesia began to be felt and entered Indonesian territory since March 2, 2020. The National Disaster Management Agency (BNPB) specifically called COVID-19a non-natural disaster with a national coverage scale, through a Presidential Decree Republic of Indonesia Number 12 of 2020 concerning Determination of Non-Natural Disasters for the Spread of 2019 Corona Virus Disease (Wibowo, 2020). Jakarta, the capital of the country as well as the center of business turnover in Indonesia, which is declared the epicenter of COVID-19 in Indonesia, has implemented a policy of social distances, work from home (WFH) and large-scale social restrictions (PSBB) for regional government officials, companies, the education sector and reduced public transport intensity with a few exceptions. There are 3,290 companies that enforce WFH policies in Jakarta (Disnakertrans, 2020). This policy is an effort to reduce the spread of COVID-19, which, if uncontrolled, will have a bigger and longer negative effect. The presence and spread of the COVID-19 pandemic, which is in an external environment (external environment) and uncontrollable (uncontrollable) or outside the company's control, then its existence considered to have contributed to determining the survival of a business entity in its activities in various industries in Jakarta.

The COVID-19 outbreak has caused economic shocks that have an impact on the economy on a local, national and even global scale (Baldwin & Di Mauro, 2020). All sectors are affected. COVID-19 immediately shook market demand both practically and psychologically. As a result, some consumers refrain from shopping, not realizing their potential demand which results in a decline in actual demand. The COVID-19 pandemic outbreak has forced many businesses to close, leading to an unprecedented disruption of commerce in most industry sectors. Some home delivery services were suspended. Trade volumes collapsed at the same time in all countries and almost all products (Baldwin & Di Mauro, 2020). The COVID-19 outbreak is likely to cause bankruptcy for many well-known brands in many industries as consumers stay at home and economies are shut down (Journal of Business Research, 2020). This condition causes the aggregate level of investment to decline which results in lower economic growth.

The evolution of the disease and its economic impact is highly uncertain which makes it difficult for policy makers to formulate an appropriate macroeconomic policy response (McKibbin & Fernando, 2020). All countries that can are trying to stimulate their economies to keep as much as possible of their necessary infrastructure intact and to keep citizens productive or ready to become productive once the pandemic has been overcome. In order to keep society from deteriorating, people not only need jobs or a way to support themselves but also need access to what they view as necessary products and services. While some businesses are struggling, some

businesses are thriving. This is true for a number of Internet-based businesses, such as those related to online entertainment, food delivery, online shopping, online education, and solutions for remote work. People have also changed their consumption patterns, increasing the demand for takeout, snacks, and alcohol as well as cleaning products as we spend more time in our homes. Other industries that are doing well are those related to healthcare and medication as well as herbs and vitamins.

Research related to the impact of the COVID-19 pandemic on online platform-based business activities in Jakarta, using qualitative descriptive methods and secondary data sources from research results, references and online news related to the study concluded that the impact of the COVID-19 pandemic was clustered in three states of business activity. First, businesses survive or are stable, secondly businesses are declining, and third are businesses that are growing. A stable business through adapting the interaction model using an online application platform is education, especially for food / beverage delivery and basic necessities, and health products. The declining business is based on visits or the presence of consumers in places severely affected by the COVID-19 pandemic, such as public transportation, tourism, hotels, offline retail, shopping centers, transportation of people and goods. Businesses that develop due to market dynamics and adaptation of interactions using online application platforms such as telecommunication businesses, online shopping (basic needs and health products), pharmaceuticals, health products, including MSMEs, are turning to innovatively producing health products needed during the COVID-19 pandemic (Taufik & Ayuningtyas, 2020).

Living in this new normal era, maintaining health, maintaining distance have given birth to positive behavior and the emergence of creative ideas, developing new skills that are not only filling time for work and activities at home but can also provide added value economically, among them are trying new businesses such as hydroponics. Hydroponics is one of the most interesting activities to do during the COVID-19 pandemic. Hydroponic cultivation is becoming a new trend in urban communities along with an increase in healthy lifestyles in pandemic period. Hydroponic vegetables are cultivated in Indonesia to supply people's demand for quality vegetables, in line with the decreasing availability of agricultural land, since 2012 - 2013 amounted to 11.37% (Kementrian Pertanian, 2014). Therefore, hydroponic vegetables is one solution to overcome this problem. This is driven by the increasing desire to consume healthy foods that can increase endurance, which are free from pesticides such as lettuce, mustard greens, Pak choy, kale, celery, and mustard pagoda. Hydroponics is suitable to be applied in urban areas which are full of limited land. Hydroponic cultivation can be done at home as a hobby or to be commercialized as a business field. Business is an individual or group activity through the use of resources to produce goods and services that have higher added value to get profit. Hydroponics is not just technical in farming, but is an opportunity that promises success.

As well as hydroponic cultivation, the worldwide demand for hand sanitizers, gloves, and other hygiene products has risen because of the COVID-19 pandemic. In some countries, there has

been a surge in complaints about profiteering and opportunism. As doctors combat the virus, prosecutors are pursuing the opportunistic profiteers who prey on the fearful. Many large corporations have a social purpose and set of values that indicate how much they appreciate their customers, employees, and stakeholders. This is the time for these corporations to make good on that commitment (Journal of Business Research, 2020). The objective of this study is to determine the aspects of community economic resilience in dealing with COVID-19, through hydroponic businesses. Digital ethnography was used to collect the data. Digital ethnography is appropriate for social and humanities research fields amid the conditions of the COVID-19 pandemic. Data were collected through in-depth interviews with hydroponic activists, documentation and observation during September 2020. Sample selection was carried out using purposive sampling technique. The data from the collected questionnaires will be analyzed through data triangulation. In addition to using descriptive analysis, we the calculation of business feasibility is determined using the payback period method.

2. LITERATURE REVIEW

Hydroponics is the method of growing plants in a water based solution (Sharma, Acharya, Kumar, Singh, & Chaurasia, 2018). Hydroponics isn't a new practice; yet, it is somewhat of a new technology. This means that the principles behind hydroponics have been around for years, but the study of it has only been around recently. Several benefits of this technique are less growing time of crops than conventional growing; round the year production; minimal disease and pest incidence and weeding, spraying, watering can be eliminated. Hydroponics, just like everything else, has advantages and disadvantages. It helps make the food we eat, air we breathe, water we drink, and soil we use; much cleaner, it is also environmentally friendly because it does not use pesticides or pests that can damage the soil. It's easy to check plant roots periodically to ensure growth. Water use is more efficient because it isn't necessary to watering every day. Plant growth is faster and quality can be maintained. There are no problems with pests and plant diseases caused by bacteria, caterpillars and worms that are abundant in the soil and it can be planted any time because it does not know the season.

Hydroponics don't need to use harmful pesticides; and can grow plant anytime of the year (as long as the conditions are right). Growing crops with hydroponics take up less space, requires less work, and are easy to harvest. Some of the disadvantages to using hydroponics are that plants will need to be supervised to insure they are growing properly. There is also the issue of money; most equipment needed is quite expensive. For successful implementation of commercial hydroponic technology, it is important to develop low cost techniques which are easy to operate and maintain; requires less labour and lower overall setup and operational cost. (Sharma et al., 2018).

The hydroponic systems which implemented at Indah Berbagi Foundation is floating hydroponic method or also known as the Floating Raft method and the Nutrient Film Technique (NFT) system. Floating Raft and NFT which have a faster planting period, between 18 days to

23 days. Commercially NFT technique has been used throughout the world for successful production of leafy as well as other vegetables with 70 to 90% savings of water. NFT was developed in the mid 1960s in England by Dr. Alen Cooper to overcome the shortcomings of ebb and flow system. In this system, water or a nutrient solution circulates throughout the entire system; and enters the growth tray via a water pump without a time control ((Domingues, D.S., Takahashi, H.W., Camara, C.A.P. and Nixdorf, 2012). Hydroponics is not just technical in farming, but is an opportunity that promises success. One of the successful independent hydroponic businesses is the MSME Bakoel Sayur which is an individual business located in Colomadu District, Karanganyar Regency, Central Java Province, which is currently carrying out many innovations to maintain and increase its sales turnover. (Rabbani et al., 2017).

This research will use mixed method research. Mixed methods research is an approach to inquiry that combines qualitative and quantitative forms of research (Sugiyono, 2013). Combined research methods will be useful when quantitative or qualitative methods are not sufficiently accurate to understand the research problem. By using a combination of quantitative and qualitative methods, the result will be better to understand (Creswell, 2015). There are two main models of combination methods, namely the sequential model (sequential combination) and the concurrent model (mixed combination). Sequential Model (Sequential Combination) is a research procedure in which researchers develop research results from one method to another. There are three kinds of sequential models, namely sequential explanatory strategy, sequential exploratory strategy, and sequential transformative strategy. Concurrent model is a research procedure in which researchers combine quantitative and qualitative data in order to obtain a comprehensive analysis to answer research problems. There are two kinds of concurrent models, namely concurrent triangulation strategy (a balanced mix of qualitative and quantitative), concurrent embedded strategy (a mixture of reinforcement / the second method strengthens the first method), and concurrent transformative strategy (Sugiyono, 2013). Data triangulation was carried out through resource persons, references from other researchers, discussions with fellow researchers / academics / research supervisors, and other discussion forums. This includes understanding theory, theoretical history, the social context of theory, theory roadmap, mastering paradigms, juxtaposing and comparing theories) and being careful in choosing data collection methods (such as in-depth interviews, mastery of elicitation techniques or information filtering) (Denzin, 1997).

In addition to the triangulation method, the data collection process is also carried out through testing the validity and reliability of the questionnaires that have been collected and scorched using a Likert scale. The questionnaires were distributed to respondents, then tested for validity and reliability. The questionnaire is a number of written questions that are used to obtain information from respondents about things they want to know and identify. Validity Validity is evidence that an instrument, technique or the process used to measure a concept actually measures the intended concept. Test validity aims to measure the validity or not statement item. The validity test should be carried out on each item of the statement is tested for validity. The

result of our r count compare with r table with sig 5%. If r table < r count then valid. Reliability test is done to show accuracy, the accuracy and consistency of the questionnaire in measuring variables. Variable is said to be reliable if it has a Cronbach Alpha (α) value of more than t table.

To test the extent to which hydroponic cultivation is profitable, a project feasibility analysis tool will be used as quantitative analysis that will strengthen the analysis. There are several approaches used to test the feasibility of a business, including 1) Net Present Value, 2) Payback Period and 3). Internal Rate of Return.

***The Net Present Value (NPV*)**

The Net Present Value (NPV) investment valuation method is the difference between the present value of the investment and the present value of future net cash receipts (Suliyanto., 2008). In calculating the net present value, data is needed regarding the estimated costs of operation and maintenance, investment costs and forecasts of profits from the investment that is being planned.

Payback Period

Payback Period is a method to find out when the return of investment funds that have been issued (Suliyanto., 2008). The payback period measures the length of time the investment funds issued by the company will return entirely to their original state. By analyzing the payback period method, it will be known how long an investment can be returned when a BEP (break even point) or break-even point occurs. If the calculation results using the payback period show a faster payback period, then the investment is feasible to run. Vice versa, if the payback period shows a longer payback period, the investment is not feasible to run. The advantages of the Payback Period are that it provides information on when investment funds will return, provides a break even point period, the payback period can be a risk consideration tool, the shorter the payback period, the smaller the risk of loss, can compare two types of investments that have the same return and risk by simply looking at the length of time the return on investment.

Internal Rate of Return (IRR)

Internal Rate of Return (IRR) valuation analysis is an investment analysis method by calculating an interest rate that equates the present value of an investment with the present value of future cash flow receipts (Suliyanto, 2008). The IRR method is perhaps the most common method. Maybe because it is easy to use and many think and believe that the calculation of IRR is a calculation that shows the true rate of return. The advantage of the Internal Rate of Return is that the IRR method does not ignore the time value of money, the basis for calculating using cash flow, has no effect on cash flow during the investment period, the calculation result is in the form of a percentage.

In this study, the payback period method will be used considering that the payback method is preferred in various organizations due to its simplicity, liquidity and risk assessment among

many other advantages. However, to get a more convincing decision, it is necessary to complement the analysis using other methods (Stamalevi, 2015).

The payback period is also used in making capital budgeting decisions based on the perspective of managers and investors in Oman. It is concluded that the risk and profitability variables have an impact on the use of PBP from an investor's perspective but there was no statistical difference between managers and investors for using PBP which was traced to any of the six variables (Al-Ani, 2015). The paper which examines the economic viability of a hydroponic system using a distinguished approach to treat investment risk and conclude that NPV is mostly affected by variations in prices received by the farmer. Risk analysis based on Monte Carlo method confirmed economic viability for the investment project proposed in this study (Souza, Gimenes, & Binotto, 2019).

3. RESEARCH METHODS

The main objective of this study is to analyze the prospects for the hydroponic vegetable business developed by the Indah Berbagi Foundation as an effort to increase the community's economic resilience during the COVID-19 pandemic located in Jabon Mekar Village. The research use digital ethnography or virtual ethnography method. This method can be used to conduct social and humanities research in pandemic condition. Pandemic conditions caused research limitation in physical interaction and not being able to conduct face-to-face interviews with respondents directly. Collecting data that is online and using ethnography in the research process is an alternative data collection technique and relevant research methods carried out during the COVID-19 pandemic. During its development, ethnographic practices have undergone increasingly clear changes. Ethnography is not only defined as a method or technique of data collection, but as a combination of the concept of data collection between observation and interview techniques to record the dynamics of socio-cultural phenomena. So that ethnography has the ability to explore digital relationships. There are two ethnographic approaches in collecting data process, (1). Participatory Observation, which prioritizes specific research features according to the platform; pay attention to data collection ethics; use the platform under study; store data off the platform; (2). In-depth interviews, pay attention to the balance of duration, explore mental and personal aspects. (Daraini, 2020). There are three important or relevant ethnographic points: First, ethnography is a qualitative approach carried out by anthropologists or sociologists, with an understanding of irrational phenomena; Second, the research method is very adaptive to the research object including the diversity of digital devices; Third, it has a precedent of digital studies since almost three decades, which has placed social and cultural phenomena in the digital space as a research topic. Using ethnography will be a consistent strategy among many other media research methods (Achmad & Ida, 2018).

Triangulation is a method used to increase the credibility and validity of research findings. Credibility refers to trustworthiness and how believable a study is; validity is concerned with

the extent to which a study accurately reflects or evaluates the concept or ideas being investigated. Triangulation, by combining theories, methods or observers in a research study, can help ensure that fundamental biases arising from the use of a single method or a single observer are overcome. Triangulation is also an effort to help explore and explain complex human behavior using a variety of methods to offer a more balanced explanation to readers. It is a procedure that enables validation of data and can be used in both quantitative and qualitative studies. There are four types of triangulation are proposed by (Norman K. Denzin, 2009), (1) data triangulation, which includes matters such as periods of time, space and people; (2) investigator triangulation, which includes the use of several researchers in a study; (3) theory triangulation, which encourages several theoretical schemes to enable interpretation of a phenomenon and (4) methodological triangulation, which promotes the use of several data collection methods such as interviews and observations. This article discusses 'triangulation' as a strategy for increasing the validity of evaluation and research findings. Triangulation is used to combine the advantages of both the qualitative and the quantitative approach. Triangulation is not aimed merely at validation but at deepening and widening one's understanding, and tends to support interdisciplinary research rather than a strongly bounded discipline of sociology or anthropology (Yeasmin & Rahman.K.F, 2012).

The next analysis that will be carried out is to test the validity and reliability of the questions on the questionnaire so that they can become a reference for further research. This test is performed using the SPSS version 16.00. The result of our r count compare with r table with sig 5%. If r table < r count then valid. So the magnitude of df = 25 -2 = 23 with a significance of 0.05. Measuring the validity of the item is done by correlating the item score with the total score item. The validity of the item is indicated by the correlation or support for the total item (score total). When we use more than one factor, it means testing the validity of the item by means of correlate between item scores and factor scores, then proceed to correlate between items with a total factor score (sum of several factors). From the calculation of the correlation will be obtained a correlation coefficient that is used to measure the level of validity of an item and determine whether an item is fit for use or not. In determining feasible or whether or not an item is used, usually a valid significance test is used if it is correlated significant to the total score. The SPSS testing technique is often used to test the validity using Pearson Bivariate correlation (Pearson Moment Product) and Corrected Item-Total Correlation, the product moment correlation formula from pearsons is used (Sugiyono, 2007):

$$r_{XY} = \frac{N\sum XY - \sum X \sum Y}{\sqrt{(N\sum X^2 - (\sum X)^2)(N\sum Y^2 - (\sum Y)^2))}}$$

Where :

$_{XY}$ = Correlation coefficient between X and Y variable

N = The amount of responden

$\sum$X = total score of the items

$\sum$Y = the total score of the questions

$\sum X^2$ = the sum of the score squared of the items
$\sum Y^2$ = the sum of the total score of the squared questiontotal score of the items

Reliability test is done to show accuracy, the accuracy and consistency of the questionnaire in measuring variables. Variable is said to be reliable if it has a Cronbach Alpha (α) value of more than 0.60. There are some reliability testing methods include retest method, Flanagan's formula, Cronbach's Alpha, the KR (Kuder-Richardson) formula method - 20, KR - 21, and the Anova Hoyt method. Frequent method used in research is the Cronbach's Alpha method. This method is very suitable on the dichotomous scores (0 and 1) and would produce an equivalent calculation using the KR-20 and Anova Hoyt methods. Reliability means trustworthy "That is, the instrument can give the right result. The instrument measuring instrument is categorized as reliable if it shows a constant measurement results and have a determination of measurement results so that it is proven that the measuring instrument really can be justified its truth. To measure the reliability of the scale or questionnaire, Cronbach's Alpha formula can be used as following (Sugiyono, 2007):

$$r_{tt} = \left[\frac{k}{k-1}\right]\left[1 - \left[\frac{\sum \delta_b^2}{\sum \delta_t^2}\right]\right]$$

Where :

rtt = instrument reliability coefficient (total test)
k = number of valid question items
$\sum \delta_b^2$ = number of grain variants
$\sum \delta_t^2$ = variant total score

The calculation of the scale reliability test is accepted, if the calculation results rcount > rtable 5%. To find out the feasibility of a business based on the length of time for the capital investment to test the extent to which hydroponic cultivation is profitable, a project feasibility analysis tool will be used as quantitative analysis that will strengthen the analysis. There are several approaches used to test the feasibility of a business, including 1) Net Present Value, 2) Payback Period and 3). Internal Rate of Return.can use the payback period model. Cash flow data is required to get the payback period value. The revenue comes from the sale of hydroponic vegetables, while expenditure is the total cost which is the sum of variable costs and fixed costs. Variable costs are costs whose amount depends on the number of products produced. Fixed costs are costs whose amount remains independent of the quantity produced (Nurhayati, 2020). The equation for calculating the payback period (PBP) is as follows: (Suliyanto. Andi, 2008).

$$PBP = \frac{net\ cash\ investment}{net\ cash\ flow} x\ 1\ period \quad \text{.....(1)}$$

The payback period is an analytical tool that has the advantage of being an analytical tool that can determine the payback period and the calculation is easy and simple. A viable business is if the payback period is less or equal to the investment age of the business (Bivisyani, 2020).

4. RESULTS

The questions were asked to 25 respondents consisted of 10 questions. Table 1 presents the questions submitted to the respondents.

Table 1. List of Questions Asked

No	Question	Answer*				
		SA	A	N	D	SD
1	Hydroponic business programs are activities that can minimize costs					
2	Hydroponic business is a simple and easy activity					
3	Hydroponic equipment and supplies are readily available and easily available					
4	The hydroponic vegetable business is very much in accordance with the needs of the community, especially during the Covid-19 pandemic					
5	Hydroponics business can save water usage					
6	The results of the hydroponic vegetable business can be used and managed independently for daily needs					
7	The hydroponic business is able to help the family economy after the main job					
8	Hydroponic business can help the community's economy					
9	The community uses hydroponic business as a business activity					
10	Hydroponics farming is an alternative livelihood for the community					

Source : Data Processed (2020)
*SA = Strongly Agree; A = Agree; N = Netral; D = Disagree; SD = Strongly Disagree

The data from the respondents were then given a score using a Likert scale with alternative value are SS = 5, S = 4, R = 3, TS = 2, STS = 1. Based on the table, the answers to the questions posed to 25 respondents, starting from the first question to the last question, get the average score in order of 3,8 4,52 4,56 4,28 4,08 3,68 4,52 4,56 4,28 4,08 and the overall mean are 4,236

Table 2. Total Score and Mean

	1	2	3	4	5	6	7	8	9	10
1	4	4	4	4	4	4	4	4	4	4
2	5	3	5	3	4	4	3	5	3	4
3	5	5	4	5	4	3	5	4	5	4
4	5	4	5	4	4	4	4	5	4	4
5	2	4	4	4	3	4	4	4	4	3
6	4	5	5	4	4	4	5	5	4	4
7	5	5	5	5	5	5	5	5	5	5
8	4	4	4	4	4	3	4	4	4	4
9	4	4	2	2	4	3	4	2	2	4
10	5	5	5	4	4	3	5	5	4	4
11	5	5	5	4	3	4	5	5	4	3
12	3	5	5	5	4	4	5	5	5	4
13	4	5	5	5	4	3	5	5	5	4
14	3	5	4	5	4	4	5	4	5	4
15	4	5	5	5	4	4	5	5	5	4
16	3	4	5	4	4	3	4	5	4	4
17	4	5	5	4	5	4	5	5	4	5
18	3	3	5	5	4	4	3	5	5	4
19	2	5	5	5	4	3	5	5	5	4
20	3	5	4	4	4	3	5	4	4	4
21	2	4	4	4	5	4	4	4	4	5
22	5	5	5	4	4	4	5	5	4	4
23	4	4	4	5	4	3	4	4	5	4
24	3	5	5	5	5	4	5	5	5	5
25	4	5	5	4	4	4	5	5	4	4
Mean	3,8	4,52	4,56	4,28	4,08	3,68	4,52	4,56	4,28	4,08

Source : Data Processed (2020)

The highest score with a total of 4,56 is the answer to question three and six shows that the general public agree that hydroponic equipment and supplies are readily and easily available and hydroponic business can help the community's economy. The question is about the tendency of the community to cultivate with hydroponic techniques which increased during the COVID-19 pandemic. In general, it can be concluded that the public perception of hydroponic vegetables is positive and agrees with the questions posed with an overall score of 4.3. The results of the interview can explain that hydroponic vegetables are very good because have higher nutrition than vegetables grown by other methods. In addition, the quality is better even though the price is more expensive than ordinary vegetables. Hydroponic vegetables is very natural and quite

easy to grow, by using water as the main planting medium. Hydroponic is easy to operate and become a profitable business alternative during the COVID-19 pandemic. There are several things that need to be considered in planting with hydroponic techniques are (1) a place that is exposed to the wind is needed to carry the oxygen needed by the plants, (2) it requires nutrients that come from water from the soaked rice and fermented banana stem Sufficient water flow (4) requires hygienic measures to ensure that the media is not exposed to bacteria or fungi. From the process of seeding to harvest it is eighteen to twenty three days. To measure the accuracy of the research instrument, in this case the question in the research questionnaire, a validity test was conducted.Validity test of this research is as table 3 below :

Table 3. Person Correlation

		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Q1	Pearson Correlation	1	0,102	0,164	-0,203	-0,051	0,105	0,102	0,164	-0,203	-0,051	0,278
	Sig. (2-tailed)		0,627	0,434	0,329	0,810	0,618	0,627	0,434	0,329	0,810	0,178
Q2	Pearson Correlation	0,102	1	0,244	0,377	0,124	0,018	1.000**	0,244	0,377	0,124	.633**
	Sig. (2-tailed)	0,627		0,240	0,063	0,554	0,931	0,000	0,240	0,063	0,554	0,001
Q3	Pearson Correlation	0,164	0,244	1	.483*	0,104	0,366	0,244	1.000**	.483*	0,104	.757**
	Sig. (2-tailed)	0,434	0,240		0,014	0,619	0,072	0,240	0,000	0,014	0,619	0,000
Q4	Pearson Correlation	-0,203	0,377	.483*	1	0,165	0,126	0,377	.483*	1.000**	0,165	.695**
	Sig. (2-tailed)	0,329	0,063	0,014		0,431	0,549	0,063	0,014	0,000	0,431	0,000
Q5	Pearson Correlation	-0,051	0,124	0,104	0,165	1	0,249	0,124	0,104	0,165	1.000**	.422*
	Sig. (2-tailed)	0,810	0,554	0,619	0,431		0,230	0,554	0,619	0,431	0,000	0,036
Q6	Pearson Correlation	0,105	0,018	0,366	0,126	0,249	1	0,018	0,366	0,126	0,249	.424*
	Sig. (2-tailed)	0,618	0,931	0,072	0,549	0,230		0,931	0,072	0,549	0,230	0,035
Q7	Pearson Correlation	0,102	1.000**	0,244	0,377	0,124	0,018	1	0,244	0,377	0,124	.633**
	Sig. (2-tailed)	0,627	0,000	0,240	0,063	0,554	0,931		0,240	0,063	0,554	0,001
Q8	Pearson Correlation	0,164	0,244	1.000**	.483*	0,104	0,366	0,244	1	.483*	0,104	.757**
	Sig. (2-tailed)	0,434	0,240	0,000	0,014	0,619	0,072	0,240		0,014	0,619	0,000
Q9	Pearson Correlation	-0,203	0,377	.483*	1.000**	0,165	0,126	0,377	.483*	1	0,165	.695**
	Sig. (2-tailed)	0,329	0,063	0,014	0,000	0,431	0,549	0,063	0,014		0,431	0,000
Q10	Pearson Correlation	-0,051	0,124	0,104	0,165	1.000**	0,249	0,124	0,104	0,165	1	.422*

	Sig. (2-tailed)	0,810	0,554	0,619	0,431	0,000	0,230	0,554	0,619	0,431		0,036
Total	Pearson Correlation	0,278	.633**	.757**	.695**	.422*	.424*	.633**	.757**	.695**	.422*	1
	Sig. (2-tailed)	0,178	0,001	0,000	0,000	0,036	0,035	0,001	0,000	0,000	0,036	
	N	25	25	25	25	25	25	25	25	25	25	25

Source : Test Result (2020)

Questionnaires which consist of ten question from Q1 to Q10 are distributed are to 25 respondents . Data processing validity test using SPSS 16.00. From the results of the analysis, the item score can be obtained with the total score. Then we compare this value with the r table value. The r table is searched table is searched for the 5% significant with 2-sided test and n = 25, then the r table is 0.396. If the r value of the analysis results is less than (<) r table, it can be concluded that these items is not significantly correlated with the total score (declared invalid) and must be removed or corrected. The summary table of the Achievement Motivation Validity Test Results is shown in Table 4 below.

Table 4. The achievement of Validity Test Result

Questions	R count	R table	Interpretation
Q1	0,278	< 0,396	Invalid
Q2	0.633**	≥ 0,396	Valid
Q3	0.757**	≥ 0,396	Valid
Q4	0.695**	≥ 0,396	Valid
Q5	0.422*	≥ 0,396	Valid
Q6	0.424*	≥ 0,396	Valid
Q7	0.633**	≥ 0,396	Valid
Q8	0.757**	≥ 0,396	Valid
Q9	0.695**	≥ 0,396	Valid
Q10	'0.422*	≥ 0,396	Valid

Source : Test Result (2020)

If r table < r count then the test instrument is valid. Based on the results of the validity test, there is one question that is invalid because the value of r table> r count is the first question, therefore this question will be eliminated. To measure the accuracy and consistency of the questionnaire in measuring variables reliability test was conducted as shown in table 5 below:

Table 5. Case Processing Summary

		N	%
Cases	Valid	25	100.0
	Excluded[a]	0	.0

	Total	25	100.0

Source : Test Result (2020)

Table 6. Reliability Statistics Result

Cronbach's Alpha	N of Items
0.737	11

Source : Test Result (2020)

Table 7. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q1	80.9200	56.327	.153	.743
Q2	80.2000	53.667	.578	.713
Q3	80.1600	51.807	.714	.700
Q4	80.4400	52.257	.641	.705
Q5	80.6400	56.657	.367	.730
Q6	81.0400	56.290	.362	.729
Q7	80.2000	53.667	.578	.713
Q8	80.1600	51.807	.714	.700
Q9	80.4400	52.257	.641	.705
Q10	80.6400	56.657	.367	.730
Total	42.3600	14.907	1.000	.757

Source : Test Result (2020)

From the analysis results obtained an Alpha value of 0.737, while the critical r value (2-tailed test) at 5% significance with n = 25 (df = n-2 = 23), obtained at 0.396, it can be concluded that the items of the research instrument are reliable. During the pandemic, one could only do activities at home but had positive benefits by doing farming independently using only limited land by growing hydroponic vegetables. In the initial stage, the amount of investment cost is around eight million which is allocated for the procurement of facilities and planting media, equipment and materials as shown in tabel 2. Based on table 2, the initial capital used to grow hydroponic vegetables is IDR 8.060.000. With one thousand planting holes that are made to produce approximately one hundred kg, with a market price per kilo between 20.000 IDR - 30.000 IDR with a harvest period of two times a year, it will be calculated that the monthly profit between Rp. 1.000.000 IDR - 1.500.000 IDR return points will be earned in the sixth month.

$$PBP = \frac{8.060.000}{1.250.000} x\ 1 = 6{,}4 \quad \text{.....(2)}$$

The investment invested will return for about six months from the start of the investment. To determine whether this investment is feasible it is necessary to first determine the estimate expected by management how long is it expected If the payback period determined by

management is one year, it can be concluded that this investment is feasible to continue. If The payback period determined by management is about six months, or a monthly return of IDR 1,259.375 it can be concluded that this investment is not feasible to continue. If it is compared to a project with a smaller initial capital, for example in this study of 8,060,000, the comparison is 0.0403 or 4%. Then the minimum monthly return is equivalent to IDR 206,666. Hydroponic research in this study resulted in a monthly rate of return of 1,259,375, greater than the level of the study with an initial capital of 200,000,000. Therefore it can be said that this hydroponic business is feasible to continue. The return of initial capital in a short time or about six months provides the basis for the decision that hydroponic planting is a profitable activity and is very feasible to implement. Research on Indoor Vertical Farming in the Urban Nexus Context: Business Growth and Resource Savings concluded that with an initial investment capital of IDR 200,000,000, the NPV data was 12,178,130 or NPV> 0 or positive, the IRR was 13% greater than the DF 10% is determined and the Payback Period is 3 years 3 months or a monthly return of IDR 5,128,205, while the length of time determined by management is 4 years. From the results of these calculations, it can be concluded that the investment in developing an open-air class in the earth and environment with the concept of recreation and inspiration for children in Surabaya is worth continuing (Avgoustaki & Xydis, 2020). Calculations using the payback period were also carried out in a study conducted by Kusuma (2012).This research result also consistent with previous research conducted by Rabbani et al. (2017) concludes the profit of hydroponic business is a very determining force for the continuity of the hydroponic business.

Table 8. Direct Cost

Account	Amount	Unit	Total (IDR)
Rods steel frame	20	rod	1.360.000
Rods Paralon pipe	40	rod	3.200.000
Nuts (bolts)	20	bolt	100.000
Paranet	10	meter	300.000
Tarpaulin	10	meter	200.000
Strepom	60	pieces	900.000
Popa Air Aquarium	2	unit	400.000
Pipe 1/5 in	4	Rod	200 000
Pipe 1 In	4	rod	320.000
Small Hose	1	unit	70.000
Water Tub	2	unit	200.000
Netpot	500	seed	500.000
Nutritional ingredients	1	package	90.000
Vegetable Seeds	1	package	50.000
Electricity costs	1	package	50.000
Rokwool	2	sleb	120. 000

	8.060.000

Source : Data Processed (2020)

5. CONCLUSION AND SUGGESTION

Through the interview and observation process, it is known that the hydroponic vegetable business method applied at Indah Berbagi Foundation uses a floating raft method and a simple NFT system which includes planting media from paralon pipes and tarpaulin. The planting installation is in the form of a bucket as a place for nutrient solution, the nutrients used are the result of its own formulation and an aerator as the air circulation. This hydropnik is a healthy vegetable because the nutrients are obtained by a fermentation system from kitchen scraps and without the slightest insecticide. Based on the questionnaire given to 25 respondents, it can be concluded that the general public knows that the tendency of people to cultivate vegetables using hydroponic techniques has increased during the COVID-19 pandemic. Based on the validity and reliability tests to measure the accuracy and accuracy of the question instruments posed in the questionnaire, the validity test results were obtained, that of the ten questions asked, there was one invalid question which was indicated by the calculated r value that was smaller than the r table. Furthermore, the reliability test shows that the instrument in question is reliable, which is indicated by the alpha value of 0.737, which is greater than the r count of 0.396. The highest score with a total of 4,56 is the answer to question three and six shows that the general public agree that hydroponic equipment and supplies are readily and easily available and hydroponic business can help the community's economy. The question is about the tendency of the community to cultivate with hydroponic techniques which increased during the COVID-19 pandemic. In general, it can be concluded that the public perception of hydroponic vegetables is positive and agrees with the questions posed with an overall score of 4.3. hydroponic business can help the community's economy. In general, it can be concluded that the public perception of hydroponic vegetables is positive and very suitable to be carried out as an innovation, especially for people in urban areas which are full of lack of land and as an alternative business to achieve community economic resilience during the covid pandemic 19. In the aspect of financing, as a business or investment, the initial capital needed is quite affordable with a rate of return of approximately six month and it can be said that this hydroponic business is feasible to continue.

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